NASA SBIR/STTR Technologies

Ultra-Narrow Tunable Optical Bandpass Filter

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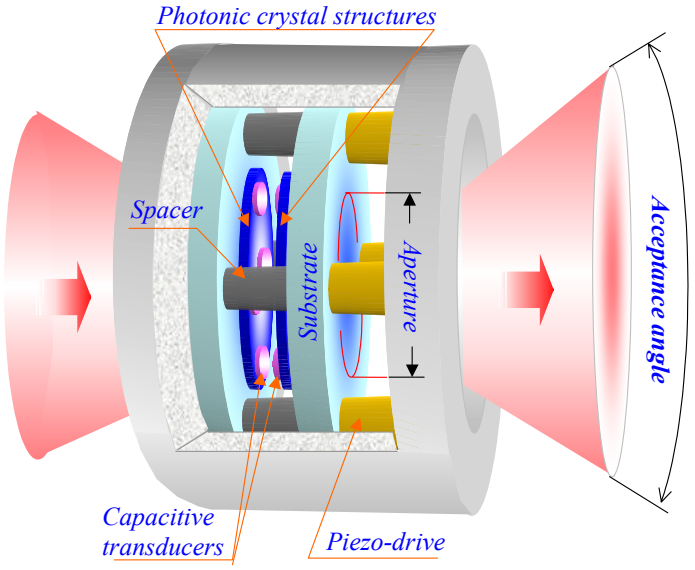
Identification and Significance of Innovation

- Photonic crystals-based ultra-narrow tunable optical bandpass filter.
- Bandpass < 0.1 nm; acceptance angle > 1°; aperture up to 2 inches.
- Electronically controlled transmission wavelength tuning.



Technical Objectives and Work Plan

- Demonstrate the feasibility of an ultra-narrow tunable optical bandpass filter.
- Demonstrate that an optical filter based on specific features of photonic crystals can provide the estimated characteristics.
- Analyze the filter performance and select optimal structure parameters.
- Arrive at preliminary design of an ultra narrow tunable optical bandpass filter.

NASA and Non-NASA Applications

- Expand capabilities of NASA's Earth Science Enterprise:
  - for high resolution multi-spectral imaging;
  - high accuracy measurements of atmospheric and surface parameters from space and airborne platforms.
- Wide range of commercial applications:
  - Combustion diagnostics, spectroscopic monitoring

Contacts

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